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MARTINEZ, BRITTANY M				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,941

Applicant(s)

YODH ET AL.

Examiner

BRITTANY M. MARTINEZ

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-139 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-139 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Application

Applicants' arguments/remarks and amendments filed April 14, 2009, have been carefully considered. **Claims 1-139** are pending in the instant application, with **Claims 11, 16, 17, 22-28, 35, 36, 44, 47-49, 57, 93-99 and 105** amended. **Claims 1-139** have been examined.

Claim Rejections - 35 USC § 102

1. **Claims 1-13, 15-18, 55-60 and 139** are rejected under 35 U.S.C. 102(e) as being anticipated by Smalley et al. (US 2003/0133865 A1) as applied in the prior Office action.

Claim Rejections - 35 USC § 103

2. **Claims 19-30, 35, 36, 98 and 99** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smalley et al. (US 2003/0133865 A1) as applied to **Claim 1** above, and further as discussed below.

3. Smalley does not explicitly disclose the concentration of dispersed carbon nanotubes being between about 0.001 mg/mL and about 500 mg/mL (**Claim 19**), at least 0.5 mg/mL (**Claim 20**), or at most 30 mg/mL (**Claim 21**); the single wall carbon nanotubes including individual single wall carbon nanotubes (**Claims 22-25 and 28**); the number percentage of individual SWNTs being at least 50 percent (**Claims 22, 27, and**

98), 75 percent (**Claim 23**), or 90 percent (**Claim 24**); the mean length of individual SWNTs being at least about 120 nm (**Claim 25**), 300 nm (**Claim 26**), or 500 nm (**Claims 28 and 99**); the weight ratio of carbon nanotubes to surfactant being in the range from about 5 : 1 to about 1 : 10 (**Claim 29**); the carbon nanotubes being charge stabilized (**Claim 30**); the aqueous liquid phase comprising at least about 50 wt% water (**Claim 35**); or the aqueous liquid phase comprising up to about 50 wt% of a solvent different than water (**Claim 36**).

4. With regard to **Claims 22-25 and 28**, one of ordinary skill in the art would expect at least some individual single wall carbon nanotubes to be present in a dispersion comprising water, single wall carbon nanotubes and surfactant (sodium dodecyl benzene sulfonate).

5. With regard to **Claim 30**, the claimed limitation would be inherent.

6. With regard to **Claims 19-21, 29, 35 and 36**, an expected component amount or ratio is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such amount or ratio varies. Since the amount/ratio is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable dispersed carbon nanotube concentration, weight ratio of carbon nanotubes to surfactant, or solvent component amount. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7. With regard to **Claims 22-24, 27 and 98**, an expected number percentage of individual SWNTs is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such number percentage varies. Since the

number percentage is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable number percentage of individual SWNTs.

In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. With regard to **Claims 25, 26, 28 and 99**, an expected mean length of single SWNTs is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such mean length varies. Since the mean length is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable mean length of single SWNTs. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

9. **Claims 14 and 31-34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smalley et al. (US 2003/0133865 A1) as applied to **Claim 1** above, and further in view of Wei et al. (US 6,899,947 B2) as applied in the prior Office action.

10. **Claims 37-52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobovsky et al. (US 2002/0113335 A1) in view of Smalley et al. (US 2003/0133865 A1).

11. With regard to **Claim 37**, Lobovsky discloses a method of preparing a dispersion of carbon nanotubes comprising mixing an aqueous medium, carbon nanotubes, and a surfactant comprising a sodium alkyl sulphate with an alkyl group having from 8 to 30 carbon atoms, such as sodium dodecyl sulphate in a low-power, high-frequency bath sonicator (Lobovsky, p. 3, 0024; p. 4, 0042; p. 5, 0050; "Example 1;" and Fig. 3).

12. With regard to **Claims 42 and 43**, Lobovsky discloses the bath sonicator having a power of 30 watts and a frequency of 20 kHz (Lobovsky, "Example 1").

13. Lobovsky does not explicitly disclose a surfactant comprising an aromatic group (**Claim 37**); mixing time in the bath sonicator being at least about 2 hours (**Claim 38**), 4 hours (**Claim 39**), 8 hours (**Claim 40**), or between about 16 and about 24 hours (**Claim 41**); said surfactant comprising an alkaline salt of a C_n alkyl benzene sulfonate, where n is between about 8 and about 16 (**Claim 44**); the concentration of dispersed carbon nanotubes being between about 0.001 mg/mL and about 500 mg/mL (**Claim 45**) or at least 0.5 mg/mL (**Claim 46**); the mixing time being selected to give rise to at least about 50 number percent of the dispersed carbon nanotubes being individual SWNTs (**Claim 47**); the mixing time being selected to give rise to the mean length of individual SWNTs being at least about 300 nm (**Claim 48**) or 500 nm (**Claim 49**); the single wall carbon nanotubes including individual single wall carbon nanotubes (**Claim 49**); the weight ratio of carbon nanotubes to surfactant being in the range of from about 5 : 1 to about 1 : 10 (**Claim 50**); the concentration of surfactant being less than the critical micelle concentration (**Claim 51**); or electronic properties of the dispersed carbon nanotubes being essentially the same as the electronic properties of the carbon nanotubes prior to mixing (**Claim 52**).

14. With regard to **Claims 37 and 44**, Smalley discloses a dispersion comprising an aqueous medium; single-wall carbon nanotubes; and a surfactant comprising sodium dodecylbenzene sulfonate (Smalley, p. 2, 0010; p. 7, 0060). Thus, it would have been obvious to one of ordinary skill in the art to modify the process of Lobovsky with the

sodium dodecylbenzene sulfonate of Smalley because one of ordinary skill in the art could have pursued the known potential surfactant options within his or her technical grasp with a reasonable expectation of success.

15. With regard to **Claim 49**, one of ordinary skill in the art would expect at least some individual single wall carbon nanotubes to be present in a dispersion comprising water, single wall carbon nanotubes and surfactant (sodium dodecyl benzene sulfonate).

16. With regard to **Claim 52**, the claimed limitation would be inherent.

17. With regard to **Claims 45, 46, 50 and 51**, an expected component amount or ratio is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such amount or ratio varies. Since the amount/ratio is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable dispersed carbon nanotube concentration, weight ratio of carbon nanotubes to surfactant, or surfactant concentration. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

18. With regard to **Claims 38-41 and 47-49**, expected mixing times, mean lengths of individual SWNTs, and number percentages of individual SWNTs are result effective variables since one of ordinary skill in the art would expect different properties in the product as such times, lengths, and number percentages vary. Since mixing times, mean lengths, and number percentages are result effective variables, it is within the ordinary skill of one of ordinary skill in the art to develop suitable mixing times and

corresponding mean lengths and number percentages of individual SWNTs. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

19. **Claims 53 and 54** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobovsky et al. (US 2002/0113335 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 37** above, and further in view of Yamamoto et al. (*Journal of Physics D*) as applied in the prior Office action.

20. **Claims 61-63, 69, 70, 72, 74-101, 103-109 and 124-126** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1).

21. With regard to **Claims 61-63**, Glatkowski discloses a method of preparing a composite comprising dispersing carbon nanotubes and a surfactant in a hardenable matrix precursor; and hardening the precursor via curing (Glatkowski, p. 3, 0048; p. 4, 0054 and 0060-0061; p. 5, 0061; p. 6, 0082; Claims 13 and 72).

22. With regard to **Claim 63**, Glatkowski discloses thermoplastics as possible polymers used (Glatkowski, p. 3, 0048).

23. With regard to **Claim 69**, Glatkowski discloses a solid media comprising a substrate, said substrate comprising carbon nanotubes (Glatkowski, p. 1, 0015; p. 3-4, 0049; Claims 22 and 35) and a surfactant (Glatkowski, p. 4-5; 0061; Claim 72) adsorbed thereon (Glatkowski, p. 11, 0131).

24. With regard to **Claim 74**, Glatkowski discloses a method of preparing a nematic nanotube gel comprising providing a dispersion comprising carbon nanotubes, solvent, gel precursor, and a surfactant; gelling at least a portion of said gel precursor to form a gel; and subjecting the gel to an orienting field giving rise to a nematic orientation of the carbon nanotubes (Glatkowski, p. 1, 0015; p. 3, 0048-0049; p. 4, 0049, 0051, 0053-0054, 0057-0058, and 0060-0061; p. 5, 0061; p. 6, 0082; Claims 13 and 72).
25. With regard to **Claim 75**, Glatkowski discloses an orienting field comprising a pressure field (Glatkowski, p. 4, 0057).
26. With regard to **Claim 76**, Glatkowski discloses the carbon nanotubes being single-wall or multi-wall carbon nanotubes (Glatkowski, Claim 63).
27. With regard to **Claim 105**, Glatkowski discloses the gel precursor comprising polymers or monomers (Glatkowski, p. 3, 0048).
28. With regard to **Claims 106-108**, Glatkowski discloses a styrenic monomer (Glatkowski, p. 3, 0048).
29. With regard to **Claim 109**, Glatkowski discloses the polymer gel precursor further comprising a crosslinker (Glatkowski, p. 4, 0060).
30. With regard to **Claim 124**, Glatkowski discloses the step of micro-phase separating the dispersion into nanotube rich/gel poor and nanotube poor/gel rich phases (Glatkowski, p. 4, 0054).
31. With regard to **Claim 125**, Glatkowski discloses the gel being a polymer gel (Glatkowski, p. 3, 0048; p. 4, 0051).

32. With regard to **Claim 126**, Glatkowski discloses the field being a pressure field giving rise to transport of at least a portion of the solvent out of the gel (Glatkowski, p. 4, 0049 and 0057).

33. Glatkowski does not explicitly disclose said surfactant comprising an alkyl group having from about 4 to about 30 carbon atoms (**Claims 61 and 74**), about 6 to about 30 carbon atoms (**Claim 69**), or about 10 and about 14 carbon atoms (**Claim 78**), an aromatic group, and a head group (**Claims 61, 69, and 74**); curing the precursor with light, heat, radiation, or time (**Claim 62**); the hardenable matrix precursor being a polymer capable of solidifying upon cooling to a temperature being lower than its glass transition temperature, its crystalline melt transition, its order-disorder transition temperature, or any combination thereof (**Claim 63**); the substrate capable of receiving chemical, biological, or both chemical and biological compounds for detection (**Claim 69**); the surfactant being adsorbed to the exterior surface of the carbon nanotubes (**Claim 70**); the carbon nanotubes being capable of adsorbing protons to give rise to a detectable signal (**Claim 72**); the surfactant being adsorbed to the carbon nanotubes (**Claim 77**); the aromatic group being disposed between the alkyl group and the charged head group (**Claim 79**); the aromatic group being capable of π -like stacking onto the surface of carbon nanotubes (**Claim 80**); the aromatic group comprising at least one carbocyclic aromatic ring, heterocyclic aromatic ring, or any combination thereof (**Claim 81**); said aromatic group comprising at least one benzene ring (**Claim 82**); said charged head group comprising a sulfate group, sulfonate group, amine group, ammonium group, or any combination thereof (**Claim 83**); said surfactant comprising

said alkyl group bonded to the aromatic group, said aromatic group being further bonded to the head group (**Claim 84**); said alkyl group having between about 8 and about 16 carbon atoms, and said charged head group comprising sulfonate (**Claim 85**); said surfactant comprising an alkaline salt of a C_n alkyl benzene sulfonate, where n is between about 8 and about 16 (**Claim 86**); said alkaline salt comprising at least one counterion selected from the Group IA elements (**Claim 87**); said counterion being sodium, potassium, or any combination thereof (**Claim 88**); said surfactant comprising sodium hexylbenzene sulfonate, sodium octylbenzene sulfonate, sodium dodecylbenzene sulfonate, sodium hexadecylbenzene sulfonate, or any combination thereof (**Claim 89**); the concentration of dispersed carbon nanotubes being between about 0.001 mg/mL and about 500 mg/mL (**Claim 90**), at least 0.5 mg/mL (**Claim 91**), or at most 30 mg/mL (**Claim 92**); the number percentage of individual SWNTs being at least 50 percent (**Claim 93**), 75 percent (**Claim 94**), or 90 percent (**Claim 95**); the single wall carbon nanotubes including individual single wall carbon nanotubes (**Claims 93-97**); the mean length of individual SWNTs being at least about 120 nm (**Claim 96**) or 300 nm (**Claim 97**); the weight ratio of carbon nanotubes to surfactant being in the range from about 5 : 1 to about 1 : 10 (**Claim 100**); the carbon nanotubes being charge stabilized (**Claim 101**); the solvent comprising at least about 50 wt% water (**Claim 103**); the solvent comprising up to about 50 wt% of a solvent different than water (**Claim 104**); or the micro-phase separating step being carried out under conditions giving rise to polymerization-induced phase separation (**Claim 125**).

34. With regard to **Claims 61 and 69**, Smalley discloses a dispersion comprising carbon nanotubes and a surfactant comprising sodium dodecylbenzene sulfonate (Smalley, p. 2, 0010; p. 7, 0060). With regard to **Claim 69**, Smalley discloses carbon nanotube composite materials useful as chemical sensors (Smalley, p. 6, 0048). Thus, it would have been obvious to one of ordinary skill in the art to modify the product and process of Glatkowski with the sodium dodecylbenzene sulfonate of Smalley because one of ordinary skill in the art could have pursued the known potential surfactant options within his or her technical grasp with a reasonable expectation of success.

35. With regard to **Claim 62**, light, heat, radiation, and time are all well-known curing approaches in the art.

36. With regard to **Claim 63**, it is well-known in the art that thermoplastics solidify upon cooling to a temperature lower than the specific plastic's glass transition temperature.

37. With regard to **Claim 70**, while the aforementioned applied art does not explicitly disclose the surfactant being adsorbed to the exterior surface of said carbon nanotubes, it is well-known in the art that surfactants adsorb to the exterior surface of carbon nanotubes.

38. With regard to **Claim 72**, while the aforementioned applied art does not explicitly disclose the carbon nanotubes being capable of adsorbing protons to give rise to a detectable signal, it is well-known in the art that carbon nanotubes are capable of adsorbing protons and thus give rise to detectable signals.

39. With regard to **Claims 74, 77-79 and 81-89**, Smalley discloses a dispersion comprising an aqueous medium, single-wall carbon nanotubes and a surfactant comprising sodium dodecylbenzene sulfonate adsorbed to the carbon nanotubes (Smalley, p. 2, 0010; p. 7, 0060). Thus, it would have been obvious to one of ordinary skill in the art to modify the product of Glatkowski with the sodium dodecylbenzene sulfonate of Smalley because one of ordinary skill in the art could have pursued the known potential surfactant options within his or her technical grasp with a reasonable expectation of success.

40. With regard to **Claim 80**, although Glatkowski does not explicitly disclose the aromatic group being capable of π -like stacking onto the surface of carbon nanotubes, this claimed limitation would be inherent.

41. With regard to **Claim 101**, the claimed limitation would be inherent.

42. With regard to **Claims 90-92, 100, 103 and 104**, an expected component amount or ratio is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such amount or ratio varies. Since the amount/ratio is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable dispersed carbon nanotube concentration, weight ratio of carbon nanotubes to surfactant, or solvent component amount. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

43. With regard to **Claims 93-95**, an expected number percentage of single SWNTs is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such number percentage varies. Since the number

percentage is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable number percentage of single SWNTs. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

44. With regard to **Claims 93-97**, one of ordinary skill in the art would expect at least some individual single wall carbon nanotubes to be present in a dispersion comprising water, single wall carbon nanotubes and surfactant (sodium dodecyl benzene sulfonate).

45. With regard to **Claims 96 and 97**, an expected mean length of single SWNTs is a result effective variable since one of ordinary skill in the art would expect different properties in the product as such mean length varies. Since the mean length is a result effective variable, it is within the ordinary skill of one of ordinary skill in the art to develop a suitable mean length of single SWNTs. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

46. With regard to **Claim 125**, it would have been obvious to one of ordinary skill in the art that in order to carry out the micro-phase separating step, the step would need to be carried out under conditions giving rise to polymerization-induced phase separation.

47. **Claims 64-68** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) and Wei et al. (US 6,899,947 B2) as applied in the prior Office action.

48. **Claims 71 and 102** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claims 69 and 74** above, and further in view of Wei et al. (US 6,899,947 B2) as applied in the prior Office action.

49. **Claim 73** is rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 69** above, and further in view of Cho et al. (US 7,013,708 B1) as applied in the prior Office action.

50. **Claims 110 and 111** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 105** above, and further in view of Pienkowski et al. (US 2002/0001620 A1) as applied in the prior Office action.

51. **Claims 112-122** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 75** above, and further in view of Ilmain (*Nature*) as applied in the prior Office action.

52. **Claim 123** is rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as

applied to **Claim 74** above, and further in view of de Heer et al. (*Science*) as applied in the prior Office action.

53. **Claims 127-133** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 126** above, and further in view of Shambaugh (US 7,001,556 B1) as applied in the prior Office action.

54. **Claims 134-136** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 75** above, and further in view of Smith et al. (*Applied Physics Letters*) as applied in the prior Office action.

55. **Claims 137 and 138** are rejected under 35 U.S.C. 103(a) as being unpatentable over Glatkowski (US 2003/0122111 A1) in view of Smalley et al. (US 2003/0133865 A1) as applied to **Claim 74** above, and further in view of Barrera et al. (WO 01/92381 A1) as applied in the prior Office action.

Response to Amendment

Applicants' amendments with regard to the Drawings and Claims filed April 14, 2009, have been fully considered and are accepted. The objections to the Drawings

and Claims, and the 35 U.S.C. 112 Claim Rejections filed October 14, 2008, have been withdrawn.

Response to Arguments

56. Applicants' arguments filed April 14, 2009, have been fully considered but they are not persuasive.

57. Acknowledgment is made of Applicants' argument that Smalley discloses the use of NADDBS yields low single wall carbon nanotube concentrations (Applicants' Response, 4/14/09, p. 16-18); however, Smalley discloses single wall carbon nanotube concentrations less than about 1 wt%, which amount appears to overlap with the concentration disclosed in at least **Claim 19** of the instant application. In any event, while Smalley may disclose a dispersion comprising water, single wall carbon nanotubes and sodium dodecyl benzene sulfonate results in nanotube concentrations too low for the intended uses of Smalley's invention, Smalley discloses a dispersion comprising water, single wall carbon nanotubes and sodium dodecyl benzene sulfonate nonetheless.

Conclusion

58. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRITTANY M. MARTINEZ whose telephone number is (571) 270-3586. The examiner can normally be reached Monday-Friday 9:00AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached at (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Langel/
Primary Examiner, Art Unit 1793

BMM

/Brittany M Martinez/
Examiner, Art Unit 1793